

### **REMARKS**

This paper is in response to the May 21, 2008 Office Action. Applicants respectfully request reconsideration of the rejections in that Office Action.

#### **I. Claim Amendments**

Claims 1-3 and 35 are pending in this application. Claim 2 has been amended to remove unnecessary text from the preamble in view of the previous amendment to that claim. Claims 23-34 have been cancelled.

#### **II. Lack of Support Objections**

The Office Action asserts that claims 23-34 are not supported by the specification, and as such these claims represent new subject matter. As a result, the Office Action asserts that the declaration filed with the application is defective.

Applicants respectfully submit that this objection is moot with the cancellation of these claims from the application. Applicants do not necessarily agree with the position expressed in the Office Action, but Applicants have cancelled these claims because these claims were not found patentable in connection with the Hursh family of patents and applications discussed in the Office Action. Applicants respectfully request that this objection be withdrawn.

#### **III. Claim Objections**

Claims 23, 30, 32, and 33 have been objected to based on antecedent grounds. Applicants respectfully request that this objection be withdrawn with the cancellation of these claims.

#### **IV. Obviousness-type Double-patenting**

Claims 1-3 have been rejected on the ground of nonstatutory obviousness-type double patenting as being allegedly unpatentable over the following patents

<u><b>U.S. Patent No.</b></u>	<u><b>Claims</b></u>
6,241,686	1-53
6,419,629	1-17
6,527,715	1-60
6,530,884	1-50
6,553,252	1-51
6,740,032	1-40
6,743,167	1-22

Applicants respectfully traverse this set of rejections.

Applicants respectfully submit that given the different statutory classes of claims 1-3 and the above-identified claims from these patents, the rejection of each of these claims over all of the previously issued claims is incorrect and is an incorrect finding of fact. A method claim is not a broader version of an apparatus (or system) claim, and likewise an apparatus (or system) claim is not a broader version of a method claim. Pending claim 1 is a method claim, pending claim 2 is a system claim, and pending claim 3 is a computer-readable medium claim, and as such Applicants respectfully submit that different claims are needed to provide a basis for non-statutory obviousness-type double patenting.

The underlying rationale in each of the rejections is that the pending claims "are broader versions of the patented claims". Applicants respectfully submit that the patented claims do not have any recitation regarding "modeling a circadian rhythm",

"means for modeling a circadian rhythm", or "first program instruction means for modeling a circadian rhythm". As such, a *prima facie* rejection has not been provided to explain how the pending claims are broader versions of the patented claims in view of the different claim language used.

Below each of the above-identified patents will be discussed.

**A. U.S. Pat. No. 6,241,686**

Claims 1-25 of the '686 patent are method claims, and therefore are a different statutory class from pending claim 2 and 3. None of claims 1-25 recite a step "modeling a circadian rhythm", which means that pending claim 1 is not a broader version of claims 1-25.

Claims 26-53 of the '686 patent are system claims, and therefore are a different statutory class from pending claims 1 and 3. None of claims 26-53 recite a "means for modeling a circadian rhythm", which means that pending claim 2 is not a broader version of claims 26-53.

**B. U.S. Pat. No. 6,419,629**

Claims 1-17 of the '629 patent are apparatus claims, and therefore are a different statutory class from pending claims 1 and 3. None of claims 1-17 recite a "means for modeling a circadian rhythm", which means that pending claim 2 is not a broader version of claims 1-17.

**C. U.S. Pat. No. 6,527,715**

Claims 1, 2, 5, 16, 17, 26-28, 35-37, 47, and 48 of the '715 patent are data signal or computer-readable medium claims, and therefore are a different statutory class from pending claims 1 and 2. None of these claims from the '715 patent recite a "first

program instruction means for modeling a circadian rhythm" or other means performing that function, which means pending claim 3 is not a broader version of these '715 claims.

Claims 3, 4, 6-15, 18-25, 29-34, and 38-46 of the '715 patent are method claims, and therefore are a different statutory class from pending claims 2 and 3. None of these claims of the '715 patent recite "means for modeling a circadian rhythm", and therefore claim 2 is not a broader version of these '715 claims.

Claims 49-60 of the '715 patent are device claims, and therefore are a different statutory class than pending claims 1 and 3. None of these claims from the '715 patent recite "means for modeling a circadian rhythm", which means pending claim 2 is not a broader version of these '715 claims.

**D. U.S. Pat. No. 6,530,884**

Claims 1-5, 8-18, 49, and 50 of the '884 patent are method claims, and therefore are a different statutory class from pending claims 2 and 3. Method claims 1-5 are directed at a different method than that recited in claim 1, and therefore claims 1-5 of the '884 patent can not serve as a basis for obviousness-type double patenting. The remaining method claims of the '884 patent do not recite "modeling a circadian rhythm", and therefore pending claim 1 is not broader than claims 8-18, 49 and 50.

Claims 6, 7, 19, and 20 of the '884 patent are computer data signal or computer-readable medium claims, and therefore are a different statutory class from pending claims 1 and 2. None of these '884 claims recite anything similar to a "first program instruction means for modeling a circadian rhythm", which means pending claim 3 is not a broader version of these '884 claims.

Claims 21-48 of the '884 patent are apparatus claims, and therefore are a different statutory class from pending claims 1 and 3. Claims 21-48 do not recite "means for modeling a circadian rhythm", which means pending claim 2 is not a broader version of these '884 claims.

**E. U.S. Pat. No. 6,553,252**

Claims 1-20 and 23-36 of the '252 patent are method claims, and therefore are a different statutory class from pending claims 2 and 3. These method claims do not recite "modeling a circadian rhythm", and therefore pending claim 1 is not broader than claims 1-20 and 23-26 of the '252 patent.

Claims 21, 22, 37, 38, 50 and 51 of the '252 patent are computer data signal or computer-readable medium claims, and therefore are a different statutory class from pending claims 1 and 2. None of these four claims from the '252 patent recite "first program instruction means for modeling a circadian rhythm" or similar an element with similar language, and therefore pending claim 3 is not broader than these four claims from the '252 patent.

Claims 39-49 of the '252 patent are apparatus claims, and therefore are a different statutory class from pending claims 1 and 3. None of claims 39-49 of the '252 patent recite a "means for modeling a circadian rhythm", which means pending claim 2 is not broader than these claims.

**F. U.S. Pat. No. 6,740,032**

Claims 1-8 and 13-40 of the '032 patent are method claims, and therefore are a different statutory class from pending claims 2 and 3. None of these method claims

recite "modeling a circadian rhythm", which means pending claim 1 is not broader than these claims.

Claims 9-12 of the '032 patent are apparatus claims, and therefore are a different statutory class from pending claims 1 and 3. None of the apparatus claims recite a "means for modeling a circadian rhythm", which means pending claim 2 is not broader than these claims.

**G. U.S. Pat. No. 6,743,167**

Claims 1-14 of the '167 patent are method claims, and therefore are a different statutory class from pending claims 2 and 3. None of these method claims recite "modeling a circadian rhythm", which means pending claim 1 is not broader than these claims.

Claims 15-22 of the '167 patent are apparatus claims, and therefore are a different statutory class from pending claims 1 and 3. None of these apparatus claims recite a "means for modeling a circadian rhythm", which means pending claim 2 is not broader than these claims.

Based on the above, the Office Action fails to provide a *prima facie* grounds for the obviousness-type double patenting. Applicants respectfully request that this set of rejections be withdrawn.

**V. 35 U.S.C. §102(b) Rejection**

Claims 1-3, 23, 28-30 have been rejected under 35 U.S.C. §102(b) as allegedly anticipated by Moore-Ede (U.S. Pat. No. 5,433,223). Applicants respectfully traverse this rejection with respect to claims 1-3, and submitted that it is moot with respect to claims 23 and 28-30.

Applicants respectfully submit that Moore-Ede discloses an alertness level prediction method and system that predicts when sleep onset is likely. Application paragraph [0017]<sup>1</sup> discusses how the baseline alertness curve of Moore-Ede is not a prediction of cognitive performance. Predicting sleep onset is not the technical problem being addressed by the invention as claimed. The invention as claimed in claims 1-3 is directed at calculating a predicted cognitive performance of an individual, which is akin to diagnosing a physical medical condition that is otherwise not ascertainable, because the level of alertness as discussed at length in the background section of the patent application is not consistently indicative of an individual's cognitive level.

Thus, an individual skill in the art can get no hints for the claimed solution of the technical problem. The technical problem to be solved is how to determine the cognitive capabilities of at least one individual to ensure that they are capable of performing a task of some sort without risking injury to themselves and/or others because their cognitive capability at that particular time is too low to safely perform the task. The invention allows a supervisor and/or commander to monitor the cognitive levels of the employees or troops who he/she has oversight over. As discussed at length in the background section of the patent application, measuring alertness is not an adequate substitute or fill-in for knowing an individual's cognitive capacity. More

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<sup>1</sup> Application paragraph [0017] reproduced:

Methods also exist to predict alertness level based on user inputs known empirically to modify alertness. U.S. Patent No. 5,433,223 to M. Moore-Ede et al. describes a method for predicting the likely alertness level of an individual at a specific point in time (past, current or future) based upon a mathematical computation of a variety of factors (referred to as "real-world" factors) that bear some relationship to alterations in alertness. The individual's Baseline Alertness Curve (BAC) is first determined based on five inputs and represents the optimal alertness curve displayed in a stable environment. Next, the BAC is modified by alertness

particularly, alertness represents the propensity to initiate sleep, while predicting cognitive performance predicts the extent to which performance of a particular task will be impaired by virtue of its reliance upon brain areas most affected by sleep deprivation (heteromodal association areas of the brain). See application paragraph [0020]. Alertness is not interchangeable with cognitive performance, because they are impacted in different ways, for example, during sleep deprivation. See, e.g., application paragraph [0011]. As such Moore-Ede does not relate to the technical problem being solved.

The technical contribution made by the invention is the use of modeling a circadian rhythm and calculating a predicted cognitive performance of an individual based on a cognitive level of the person and the circadian rhythm. The predicted cognitive performance for the individual allows the individual to be aware of an objective measure of the cognitive ability and/or someone other than the individual is able to monitor the individual. This in turn allows the supervisor to determine whether the individual will be impaired and unable to safely perform a task and/or duty.

Therefore, Applicants respectfully submit that claims 1-3 are patentable over Moore-Ede and request that this rejection be withdrawn.

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modifying stimuli to arrive at a Modified Baseline Alertness Curve. Thus, the method is a means for predicting an individual's alertness level, not cognitive performance.



**VI. 35 U.S.C. §102(e) Rejection**

Claims 23-34 have been rejected under 35 U.S.C. §102(e) as being allegedly anticipated by Hursh (U.S. Pat. No. 7,118,530). Applicants respectfully submit that this rejection is moot with the cancellation of claims 23-34.

**VII. Conclusion**

Applicants thank the Examiner for indicating that claim 35 is allowable over the prior art.

In view of the foregoing remarks, it courteously is urged that all the claims are allowable and that the application is in condition for allowance. If the Examiner believes that the prosecution could be advanced through a telephone conversation, then the Examiner is invited to telephone the undersigned. Favorable action in this regard earnestly is solicited.

Respectfully submitted,  
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